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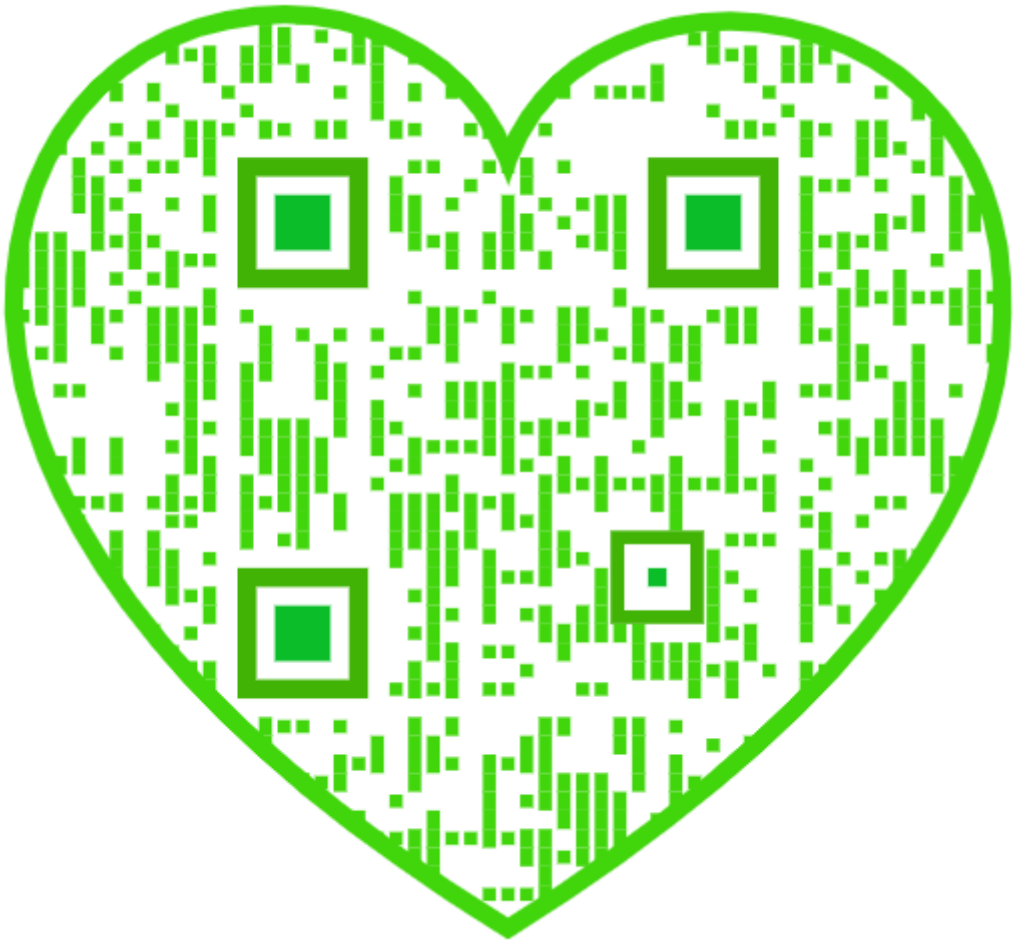

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SURGICAL SUGGESTIONS.

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PRACTICAL BREVITIES IN DIAGNOSIS AND TREATMENT

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PREFACE

The "Surgical Suggestions" published during the past year in the successive issues of the *American Journal of Surgery* have been extensively quoted in medical journals throughout the United States and Canada. This has suggested to us that their arrangement in logical order, and in a concise form, might prove of value.

These practical brevities make no pretensions to completeness. They are merely observations taken here and there from our own surgical experiences.

W. M. B.
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SURGICAL SUGGESTIONS.

Cranium.

In cases of head traumata, bleeding from the mouth or nose does not necessarily mean that the case is one of fracture at the base. The hemorrhage may be entirely due to a localized injury.

In exploring for tumors of the brain, the best guide for determining an isolated hardness is the finger; the use of a needle is very deceptive.

Nose.

Severe pain in the orbit or even in the eye itself should make one think of frontal sinus infection, especially if there is, or recently has been, a nasal discharge. Marked localized tenderness will soon confirm the suspicion, if the disease exist.

A persistent, chronic discharge from the nose should lead one to suspect chronic disease of the frontal or other accessory sinus.

Frontal sinus suppuration rarely requires a disfiguring operation for its relief. It can usually be satisfactorily dealt with through an opening in the line of the eyebrow.

In chronic osteomyelitis of the jaw it is better to wait months for a sequestrum to form than to operate a dozen times for the removal of necrosed bone.

Mouth and Throat.

Before operating for pharyngeal adenoids or hypertrophied tonsils make sure that these are not merely an expression of status lymphaticus. If they are, do not employ an anesthetic. Also determine whether the patient is a hemophiliac. If he is, do not operate at all.

When opening a retropharyngeal or peritonsillar abscess in a small child, by the buccal route, have the head dependent and instruments at hand for tracheotomy. These instruments are needed but rarely, but then urgently.

It is wrong to perform any radical operation for an ulcer of the tongue without preliminary microscopical examination. Clinical symptoms, no matter how typical, are often misleading.

When a patient complains of dysphagia, do not neglect to examine the pericardium for effusion.

Ear.

A furuncle deeply situated in the external auditory canal gives signs that may be mistaken for mastoiditis. Great pain when the concha is moved about, will serve to differentiate it from the latter.

Severe and repeated headaches may be due to the unsuspected presence of otitis media, with or without mastoiditis.

In cases of unaccountable fever, especially in children, never fail to examine the ear.

Tinnitus aurium, present only in the recumbent posture, is suggestive of aneurism of one of the posterior cerebral vessels.

The history of a discharge from an ear appearing a few days to a few weeks after the beginning of a slowly developing deafness in that ear, unaccompanied at any time by pain, is suspicious of tuberculous otitis media.

A bean-shaped pulsating swelling just below the mastoid apex, in cases of mastoiditis, may be only a lymphatic gland, but it may also be a thrombosed jugular vein. Its nature should therefore be determined before the operation is concluded.

HEAD.

During mastoid operations always sever with scissors any fragment of tissue attached to a bit of bone loosened with the chisel or rongeur, before removing it. The tearing out of a fiber of the sterno-mastoid muscle, for example, will open a channel of infection in the neck.

If the zygomatic cells are thoroughly laid open, one frequent cause of persistent suppuration requiring secondary mastoid operation, may be avoided.

NECK.

In seeking a cause for torticollis, don't fail to examine the teeth.

Persistent pain in an arm may be due to the presence of a "cervical rib."

Avoid the use of peroxid of hydrogen in wounds of the neck. It is too apt to dissect up the loose cellular planes. The same warning applies in many cases of cellulitis of the hand or foot.

Do not empty a thyro-glossal cyst by aspiration before extirpating it. It is well to inject the cavity with a methylene blue solution first, in order to make sure that all parts

of the cyst wall will be extirpated. Another method is to first empty the cyst and then fill it with paraffin.

Hard subcutaneous tumors of the upper third of the neck, with signs of malignancy, are often epitheliomata arising from branchial clefts.

The best site for an urgent tracheotomy is through the crico-thyroid membrane. To hold the opening apart a couple of hair pins bent at the end may be used as retractors.

In the performance of high tracheotomy a great deal of room can be gained by dividing transversely the fascia that extends upward from the thyroid.

The greatest immediate danger after a tracheotomy is the possibility of a subsequent pneumonia. This can, in a large measure, be obviated by filtering the inspired air through a soft sponge saturated with warm one per cent. phenol solution.

Repeated attacks of coughing after tracheotomy may mean irritation of the posterior wall of the trachea by the tube; change the length or shape of the canula.

BREAST.

A "tumor" of the breast occasionally proves to be only a chronic abscess. It has happened that a breast amputated for carcinoma has been found to be the seat of old abscesses only.

In the presence of a breast infection that fails to heal within a reasonable time after appropriate incision and dressings, it is well to think of local tuberculosis.

THORAX.

Do not be too hasty in making a diagnosis of intercostal neuralgia. With the exception of pulmonary and pleural conditions, ulcer of the stomach simulates intercostal neuralgia more frequently than any other lesion.

In strapping the chest for fractured rib, two points should be particularly noted: 1. The straps should pass well beyond the median line. 2. They should be applied in full expiration. One or two straps passed over the shoulder help much to secure immobilization.

It is remarkable how frequently a purulent pericarditis may exist without causing many or severe symptoms. Never neglect an examination of the cardiac area, therefore, in cases of suspected sepsis.

In aspirating the chest, see to it that the syringe is in good condition before inserting the needle. Never apply the syringe to the needle after the latter has been inserted; a severe pneumothorax may result. If the syringe is found to be out of order while the aspiration is being done, withdraw the needle also and reinsert.

There is one point that must always be thought of when pus has been aspirated after an exploratory puncture for either suspected empyema or liver abscess,—to make sure that the "pus" does not come from a bronchus. This can be determined, as a rule, by microscopical examination of the aspirated fluid.

Very extensive and rapidly spreading subcutaneous infections may result after an aspiration of a foul-smelling empyema. It is therefore wise to always operate over the site of aspiration, and especially to see that the puncture wound is well drained.

When operating for empyema thoracis it is a good rule to aspirate again when the pleura is exposed and before it is incised. This may save some embarrassment.

THORAX.

The shock of evacuating an empyema thoracis may be largely avoided by making but a small opening in the pleura (after resecting the rib) and applying at once several thicknesses of gauze. At the next dressing much or most of the pus will be found to have escaped into the gauze, and the pleural wound may then be enlarged without producing shock.

ABDOMEN.

It is surprising how much information can be derived by abdominal palpation conducted with the patient in a hot bath, the temperature of the water being gradually raised to 105 degrees F. It usually secures as much relaxation as does the administration of an anesthetic, sometimes even more. In addition to the avoidance of the dangers and the disagreeable features of narcosis, it has the important advantage that the patient is able to call the examiner's attention to sensitive areas.

Enlargement of the veins at the side of the abdomen is indicative of obstruction to the flow of blood in the inferior vena cava; distention of veins about the umbilicus suggests obstruction in the portal circulation. The former may be associated with varices of the lower extremities, the latter with hemorrhoids.

Steady loss of weight without other demonstrable cause should lead the physician to look for a possible malignant visceral neoplasm. Persistent "indigestion" due to some condition not positively ascertained, should be submitted to surgical diagnosis.

Unless some other cause is evident don't fail to examine for signs of tabes when an adult complains of pains about the waist, in the back or in the lower extremities.

In all cases of acute abdominal pain, never fail to examine the lungs and gums. The onset of pneumonia or pleurisy frequently closely simulates acute appendicitis; lead colic may simulate almost any painful abdominal condition.

Do not ligate tumors of the navel without making sure that the intestine is not included within the ligature.

Eczema of the umbilicus is sometimes merely the expression of an infected dermoid cyst at that site.

Catheterization sometimes makes the evidences of "appendicitis" or abdominal tumor"

vanish with the escape of the urine from a distended bladder.

In perfoming paracentesis in the median line for abdominal fluid, be sure that the bladder is empty. When it is necessary to perform paracentesis in the lateral part of the abdomen, be careful to avoid the deep epigastric artery.

Bile Tract.

Gradually increasing jaundice without previous history of pain, or with a history of very slight pain, is very suggestive of malignant disease.

Examine the rectum in all cases of tumor of the liver. Likewise, before operating for cancer of the rectum examine the liver for metastasis.

In the progress of a cholecystectomy, if a stone slips away after cutting through the cystic duct, and cannot be found, no great anxiety need be felt, for the stone usually comes away spontaneously in the subsequent discharge.

Great pain following any operation upon the biliary tract should always lead one to

suspect leakage of bile into Morrison's space. If such should be found to be the case insert a drainage tube.

When operating for cholelithiasis, don't fail to examine the hepatic duct.

When palpating the common bile duct for stone, make sure that a suspected calculus is not a gland.

Stomach.

Children who complain frequently of pain in the stomach should be examined for evidence of beginning Pott's disease. Such cases treated before the development of curvature usually yield very satisfactory results.

In all cases of recurrent vomiting examine the midline of the abdomen for a small epigastric hernia.

It is a peculiar fact that post-operative prolapse through the epigastric wound occurs frequently in operations for malignant disease of the stomach. Such wound therefore should be closed with more than usual firmness and all possible precautions should be taken to guard against post-operative vomiting.

In a patient with spondylitis, symptoms simulating acute peritonitis may be due to acute dilatation of the stomach.

A reasonable suspicion of the presence of a cancer in the stomach or intestine is sufficient indication for explorative operation.

Do not be too sure that a mass in the region of the pylorus is a carcinoma. In some cases the infiltration around a chronic ulcer is very extensive and may simulate the feel of a new growth.

If a patient begins to vomit long after a radical operation for carcinoma of the stomach, do not jump to the conclusion that the cause is a local recurrence. It may be a metastasis in the brain.

Intestines.

In the presence of anemia or of faintness, without other apparent cause, inquire concerning the passage of black stools. The condition may result from hemorrhages due to an ulcer or neoplasm of the small intestine.

In typhoid fever spontaneous rupture of the spleen may simulate intestinal perforation.

At the onset of an attack of acute appendicitis the pain is usually referred to the gastric region.

The twisting of the pedicle of a small ovarian cyst may simulate both the symptoms and signs of attacks of appendicitis.

Simple or multiple enterostomy, usually with prompt suture of the opening, is many times a life-saving operation in the presence of intestinal paresis, as from general peritonitis.

Attacks of abdominal pain preceded by "rumbling" of the bowels is suggestive of some obstructive condition.

A passage of gas or even of a small amount of feces, after an enema, does not gainsay the presence of intestinal obstruction.

In an acute condition simulating intestinal obstruction, if a large mass can be felt in the abdomen, think of omental torsion.

An attack of acute intestinal obstruction, with passage of blood, and in the presence of a cardiac lesion, is suggestive of thrombosis of a mesenteric vessel.

ABDOMEN.

Every case of intestinal obstruction of obscure origin should be inquired into closely with reference to a previous history of cholelithiasis. If a definite history of this is obtained, it is well to suspect obstruction by a gall-stone.

When operating for volvulus of the large intestine, insert a rectal tube as high up as possible before attempting the reduction. The volvulus will quickly collapse and the necessity for evisceration will thus be avoided.

When reducing an intussusception don't pull on the intussusceptum but push on the intussuscipiens.

RECTUM.

Don't fail to make a digital rectal examination in cases of appendicitis and in all ailments when the diagnosis is obscure. Nor should it ever be omitted before an operation upon anal disorders. It may save the embarrassment of a subsequent discovery that a patient's hemorrhoids, for example, were but an expression of a carcinoma higher up in the rectum.

A radical operation for hemorrhoids should not be undertaken until the etiology

of the piles has been determined. Sometimes the cause is an obstruction in the portal circulation due to hepatic disease. Per contra, abcess of the liver may be due to infection from a hemorrhoid operation performed even some months before.

A skin-lined sinus opening between the coccyx and the anus, when not very short, usually leads to a dermoid cyst situated close to the coccyx. Frequently loose hairs from the dermoid may be found in the sinus.

Although the anal reflex requires profound anesthesia to abolish, chloroform or ether is not always needed in order to divulse the sphincter ani. This may be accomplished painlessly, and usually with entire satisfaction, under ethyl chlorid or nitrous oxid narcosis if, especially, an opium suppository is introduced a half-hour beforehand, and a pledget of cotton wet in cocain solution is applied just before the operation.

After an operation for hemorrhoids it is desirable to insert into the rectum a tampon canula, made by smearing with vaselin gauze layers wrapped about a piece of rubber tubing, about three inches long and transfixed at its distal extremity with a large safety

pin. The tampon canula prevents oozing by its gentle pressure, allows any considerable hemorrhage to show itself externally, makes the escape of flatus painless and the introduction of an oil enema easy.

After operations upon the rectum, especially after those involving divulsion of the sphincter ani, voluntary urination is apt to be inhibited for a day or more. This is especially the case when stretching is done in a sagittal direction, i.e., towards the urethra and the coccyx. It may save catheterization, therefore, if the stretching is done only laterally, i.e., towards the tubera ischii.

When removing hemorrhoids much after-pain may be obviated by making radiating nicks in the skin margin of the anus.

Prolapse of the rectum in children usually yields to treatment by strapping the nates together with adhesive plaster, if carried out intelligently and persistently, for several weeks or months. The child should be obliged to defecate in the recumbent posture and while the strap is on. After defecation the strap is removed, the parts cleansed and a fresh strap applied, all while the child is recumbent.

It is not sufficiently established that the character of the crystals found in the urine indicates the presence or identity of lithiasis in the urinary tract. When cystin crystals are constantly found in the sediment, however, if symptoms of lithiasis are present, the stone is probably made up of cystin.

A point worth remembering in the diagnosis of nephrolithiasis is that red blood cells are almost always found in the centrifugalized sediment in the urine even in the interval between attacks of colic.

In a very acid urine red blood cells may be disintegrated and appear under the microscope as an amorphous material. When it is important to determine the presence or absence of blood in the urine it is sometimes necessary, therefore, to resort to a chemical test, e. g., that with guaiac resin.

A radiographic shadow simulating that of a urinary calculus may be produced by an atheromatous plaque, as, for example, in the internal iliac artery, by a phlebolith, or by a calcareous gland.

Attacks of abdominal pain associated only with intestinal symptoms, may nevertheless

be due to a renal or ureteral calculus, even though, in addition, a tender area may be palpated at a point more or less remote from the kidney regions.

The perinephric space is a frequent site of metastatic inflammation after furunculosis or other septic infection.

If possible, always tie each component of a kidney pedicle separately, not en masse.

If a stump ligature, e. g., of the renal pedicle, is slow to come away, the process may be hastened by fastening it taut to a piece of rubber tubing stretched across the wound.

If pus persists in the urine after the extirpation of a kidney for suppurative disease, it often means that the ureter is involved and will require subsequent extirpation.

When operating upon the ureter for calculus or stricture, avoid undue manipulation; it is important to prevent detachment of the ureter from its bed, if possible.

Pyuria without symptoms is suspicious of an early tuberculosis of the urinary tract.

Most cases of sudden, unexpected hemorrhage from the urethra, are due to malignant disease, but it is well to remember that there are cases of genito-urinary tuberculosis in which such a hemorrhage is the first symptom.

The examination for tubercle bacilli in the urine by the ordinary method of staining, is not decisive by any means, even if the bladder has been catheterized and differential stains for smegma bacilli have been employed. Numerous examinations with the aid of these procedures must be made, and even then the diagnosis is only a presumptive one. The only sure test is by injecting a large quantity of the sediment into a guinea-pig.

Before excluding glycosuria examine both morning and evening specimens of the urine.

Bladder.

Involuntary urination very often means a distended bladder, and in old men it should at once indicate an examination into the condition of the prostate. Vomiting, too, is often caused by distention of the bladder.

It should be borne in mind that stone in the bladder may be the primary cause in

children of enuresis, masturbation or prolapsus recti.

What feels at the other end of the searcher like a stone in the bladder, may be a fold of mucous membrane encrusted with urinary deposit.

In cases of suspected rupture of the bladder, catheterization is not always a sure test. The rent may be so large that the catheter draws away urine that has already flowed into the peritoneal cavity.

Never attempt to pack a bladder for hemorrhage without the aid of guy sutures; with them one can make absolutely sure that the gauze goes into the bladder, and not on top of it, pushing the organ away from the space of Retzius.

To prevent a suprapubic or other drainage tube from becoming displaced is easily accomplished by fitting another tube over it like a collar; this outer tube is split through half its length and the two portions are spread out over the skin and fastened down with adhesive plaster.

Before employing a rubber catheter test its resiliency. If it is brittle or cracked, discard it. Not infrequently a rotten catheter breaks off in the bladder while, of course, a rough catheter or sound may play havoc in the urethra.

Unconscious patients should be catheterized at regular intervals of about eight hours.

An acutely distended bladder should not be completely emptied in one sitting. Its rapid collapse may produce hemorrhagic cystitis.

Penis.

Force is never helpful in overcoming the resistance of a stricture to instrumental passage; it is bound to do harm. A combination of patience and hot applications, with a strong admixture of gentleness and judgment, will effect the desired result in most cases.

One death from urethral sepsis is enough to impress upon one the importance of the teaching that perineal drainage should always be employed after internal urethrotomy three or more inches from the meatus.

Avoid the temptation to employ a con-

strictor upon the penis when performing circumcision, etc. It may cause sloughing, or actual gangrene.

After circumcision it is important to prevent adhesion of the reflected mucous fold of the prepuce to the corona glandis, by the daily passage of a probe about the corona, and by the use of vaselin.

Absorbent cotton, so commonly used to catch the discharge of gonorrhea, is very inelegant. It sticks to the glans, allows the meatus to glue together, and is difficult to remove without soiling the fingers. The following is the cleanliest and most surgical dressing. In a six inch square of surgical gauze, of about four thicknesses, cut a slit in the middle just large enough to be passed over the glans and to be held behind the corona. Then simply draw the foreskin forward. Indeed, such a dressing will hold even if the patient has been circumcised, if the slit in the gauze is not too large. With such a simple dressing, there is no retention of the pus, no irritation from contact with the secretions, the organ is readily inspected and the gauze is easily drawn off by a little pull at one of its clean corners.

Scrotum and Testicle

A comforting support for the testicles, when a patient is confined to bed with orchitis, is easily furnished by a well-padded cigar box cover, grooved to fit under the scrotum, and laid across the thighs. Adhesive plaster may be used in the same manner.

In hydrocele the base of the tumor is below, in spermatocele it is usually above. A milky fluid obtained by aspiration usually speaks for spermatocele.

If a cystic swelling in the scrotum is opaque when examined by the well-known transillumination test, especially if a history of traumatism is elicited, it may still be a hydrocele. Admixture of blood in the hydrocele destroys its translucency.

If a male patient with supposed strangulated hernia complains of pain running down the inner aspect of the thigh it is well to think of torsion of the testicle.

Accumulated experience shows that castration alone will not cure the great majority of cases of tuberculosis testis. In many, if not most, cases the vas deferens,

seminal vesicle or prostate is involved, and it will be necessary to remove one or more of these structures in order to cure.

In excising a varicocele under local anesthesia, tie the upper ligature first; the pain of tying the lower ligature will then be abolished.

After the open operation for varicocele the scrotum may be shortened by simply sewing the wound together transversely instead of longitudinally.

GYNECOLOGICAL.

It is a good rule to always inspect the labia before making a vaginal examination. Many pathological conditions in these parts may otherwise pass unsuspected.

Don't be tempted to exclude gonorrhea because you see no bacterial or other evidence of vaginal or urethral infection. In women the presence of gonorrhea may not make itself known for six weeks or more, and salpingitis may be the first evidence.

Simple incision is not sufficient in the treatment of Bartholinian abscesses. They should be cauterized daily with iodin, and if they recur, excised.

In the early months of pregnancy examinations should be made to determine that there is no retroversion, or to treat it if it exists. A retroverted gravid uterus impacted in the curve of the sacrum always aborts.

Ascites in the presence of a mass in the pelvis usually, but not necessarily, means malignancy.

Avoid introducing a uterine sound in examinations when pelvic inflammation is suspected. It may set up a parametritis.

Impaction of feces in the sigmoid and rectum, with absorption symptoms, may simulate pelvic peritonitis.

When cleansing the vagina and vulva in preparation for an operation, a soft cotton mop should be used for the vestibule; a stiff brush is too apt to bruise or lacerate the urethra and cause dysuria for some days thereafter.

Before performing curettage always make a final bimanual examination of the uterus in narcosis. The finding may determine some other form of treatment. Again, after

curettage, before allowing the patient to get out of bed, carefully examine the pelvis for signs of a possible exudate.

As a final cleansing step after curettage of the uterus it is well to introduce, and at once withdraw, a packing of gauze. This brings out with it fragments of tissue not washed out by the irrigation.

Sudden collapse after a curettage for supposed abortion may mean the rupture of an unsuspected ectopic gestation sac.

In pulling on the round ligaments in the Alexander operation, use the fingers rather than instruments; a surer hold is given, one can gauge the proper force to employ more readily, and there is less likelihood of the ligaments tearing.

EXTREMITIES.

Lymph-edema of the lower extremity associated with a swelling in the groin (fluctuating or not) is significant of carcinoma of the inguinal glands. The primary lesion may be in the rectum, e. g., an epithelioma of the anus that is giving no symptoms.

Do not consider too lightly a history of "growing pains" in the extremities in chil-

dren. These symptoms may be due to a grave osteomyelitis.

The presence of sciatica demands a careful exploration of the pelvis by rectal or vaginal examination. It should also be remembered that Osler described sciatica as one of the early symptoms of cancer of the breast.

The following are some of the conditions in the presence of which an examination for tabes dorsalis should never be omitted: 1. All primary swellings of the knee or ankle joint without apparent origin. 2. "Sciatica" and "lumbago." 3. A deep ulcer on the base of the great toe. 4. Repeated vomiting at various intervals, with periods of well-being intervening. 5. Abdominal pains without other evident cause.

Pain in the leg after an abdominal operation often means the development of a femoral vein thrombosis. This occurs usually the left side.

Congenital paralysis of the lower limbs may arise from an internal sacral or coccygeal spina bifida. In such cases rectal ex-

amination reveals the trouble and an operation may afford marked improvement or even a brilliant cure.

Never advise an elastic stocking in cases of varicose veins where recent phlebitis exists. The pressure may detach a part or whole of the thrombus, propelling it into the general circulation.

When performing amputation, arthrectomy, osteotomy or similar operation it is wiser to leave the constrictor in place until the dressing is partly, or entirely, applied, than to remove it after tying the large vessels, in an effort to secure the small ones. In the former case the snugly applied dressing will safely prevent hemorrhage; in the latter case, there may be an alarming loss of blood from the numerous small vessels in the very time the efforts are made to tie them all.

Do not amputate an extremity for sarcoma without a previous careful examination of the lungs and mediastinum for metastasis. Such symptoms as continued cough, a small hemoptysis or beginning dyspnea, should be regarded as highly suggestive of such a complication.

After major amputations an elastic constrictor should always be left at the head of the bed, so that the nurse can immediately apply it in case of secondary hemorrhage.

Inflamed areas and abscesses about the knees of creeping infants should be examined for foreign bodies.

Punctured wounds about the knee should be treated with the greatest solicitude and attention to asepsis, in order to prevent infection of the joint.

In operating for loose bodies within the knee joint, do not be satisfied with removing but one body; a careful examination should be made to determine the presence of more, for they are very frequently multiple.

Pulsation in the course of an artery should not lead to the hasty conclusion that one is dealing with an aneurism. A tumor overlying a large vessel, and also a vascular sarcoma of the bone, may simulate an aneurism very closely.

Never incise a swelling in the course of a large artery without making sure first that it is not an aneurism.

When clamping a vein in continuity secure the proximal end first; otherwise it will empty and may become lost to view.

Foot.

Tenderness in the heel, or pain and tenderness in the sole of the foot is very often, indeed, of gonorrheal origin. It will not be relieved in such cases until treated on that basis. The patient may deny that he ever had gonorrhea. Examine his urine; shreds tell their own story.

Do not be too hasty in ascribing the cause of pain in the tendo Achilles, or Achilles bursa, to an ill-fitting shoe. First exclude gonorrheal infection.

If the cause of pain in the feet is not otherwise clear, examine them in the dependent position. This may develop the presence of erythromelalgia.

The determination of the presence of a fracture of one of the mid-tarsal bones, is extremely difficult, and usually impossible, without x-ray examinations. Yet these examinations have shown the occurrence of such fractures, alone, or associated with injuries to other bones, as the result of injuries

by slight or severe direct violence. For this reason, and because fractures of the metatarsals by indirect violence are by no means uncommon, it should be practically a routine to submit the foot to skilful skiagraphy in all cases where either form of violence may have occurred. It will save many patients from weeks of suffering and disability. In this region, more than in any other, the x-rays are a means of diagnosis that cannot be dispensed with.

Many, at least, of the sprains of the ankle involve a fracture of the tip of the malleolus, and should be treated by immobilization in plaster-of-Paris.

In old people, as in diabetics, corns, bunions and wounds of the feet demand the most careful attention. They are often the starting points of gangrene.

A very simple method of curing a corn is to excise it.

A useful method of treating mild grades of ingrowing toe-nail consists in pulling the flesh away from the nail with a strip of adhesive plaster, disinfecting the space between

flesh and nail and packing it with a bit of gauze. The gauze may be run under the edge of the nail, which, in addition, may be trimmed away from the flesh.

Hand. Remember that chronic ulcers on the hands are found in brass workers, and that a discontinuance of this occupation is necessary to secure healing.

The best drainage should be afforded for all punctured wounds of the palm; suppurations in this region are very disagreeable and are followed by severe consequences.

In dealing with infections of the hand bear in mind that under a simple bleb may lie an extensive phlegmon, threatening, or actually involving, a tendon or bone and urgently needing a generous but wisely placed incision; while on the other hand, a tendon may be thrust from its protecting sheath into the area of destruction by a knife sweep more earnest than judicious. A crater-like opening in a sodden skin, though freely discharging pus, may need enlarging to protect the tissues underlying; while another opening, too long continued by unnecessary packing, may cripple a joint or tendon by undue cicatrization.

Indolent sinuses, as of the fingers after deep infections, frequently heal by the daily use of prolonged immersions in hot water.

In dealing with infections or injuries of the fingers amputation should be a dernier resort. This is especially the case with a thumb, the most important of all the fingers.

In a case of fresh traumatic amputation of a part of the finger, if the amputated part has not been too lacerated or crushed, try to restore the member by cleansing the parts carefully and suturing it to the stump. Once in a while the graft will "take."

When exploring for a needle or other foreign body the finger tip is often far more useful than a probe. It must be remembered, too, that strands of fascia often impart to a probe "the feel" of a foreign body. Cutting and picking at these deceptive strands of tissue soon distort the field of operation and destroy important relations. It is extremely desirable to conduct a systematic and cleanly dissection when seeking a foreign body.

FRACTURES.

Very often the unskilful treatment of a fracture is worse than no treatment at all.

Serious deformities may result from the neglect of small details no less than from the violation of important principles.

The important considerations in the treatment of fractures are, at first, relief of pain and reduction of swelling, and, subsequently, preservation of function of the muscles, the nerves and the neighboring joints. Thus there have come into modern methods a recognition of the value of early and frequent massage and passive motion (and in suitable cases, of active motion) and of the necessity for avoiding splints that unduly compress the muscles or deprive them of activity.

In the treatment of fractures of the forearm no consideration is more important than the avoidance of contractures of the fingers, by the intelligent use of splints and by means of early, active and passive movements.

Permanent contracture of the muscles, notably of the flexor group in the forearm, may develop within a very short time after the application of a splint that exercises undue compression. It is a wise rule to inspect all fracture dressings within twenty-four hours;

and when this is not expedient special care should be exercised, when applying the dressing, to avoid compression.

In very many cases it is not necessary to the diagnosis of fracture to elicit crepitus and abnormal mobility—often painful manipulations. In several forms of fracture there are other positive diagnostic evidences. Thus, with Colle's fracture the level of the styloid of the radius will almost always be found to have receded from beyond that of the styloid of the ulna. Moreover, x-ray examinations save much painful manipulation.

In all examinations of children, and in the examination of adults for suspected fractures, leave the painful manipulations for the last.

The x-rays have taught us that mathematical reduction is rarely, and even linear reduction is seldom, accomplished even in cases in which excellent functional results are secured. Radiographs have thus frequently been made the basis of blackmailing damage suits. Nevertheless the x-rays are, of course, of immense value in the treatment of fractures—not only for refer-

ence before and after reduction, but during the reduction itself.

A fracture produced by only slight violence should at once raise the suspicion of a malignant growth. In such a case a uniform dark shadow about the bone as seen in the fluoroscope is to be interpreted as a neoplasm rather than as callus, for recent callus is not opaque to the x-rays.

If a small child has been pulled by the arm and thereafter has disability in that member, attention should first be directed to the upper end of the radius. Here one is apt to find a subluxation of the head of the bone ("pulled arm") or an epiphyseal separation.

In the aged pain and disability in the arm after traumatism demand especial care in examination of the shoulder. Fracture of the head of the humerus is often overlooked.

It must be remembered that fractures of the metatarsal bones may be produced by slight injuries. Thus, the base of the fifth metatarsal may be fractured by a twist of the foot while walking or dancing.

In cases of fracture where an end of the bone lies close beneath the skin do not place a pad or any pressure whatever over this point.

When applying a plaster dressing to the leg always include the foot if the patient is to be confined to bed; otherwise "drop foot" will develop.

A padded triangular wooden or cardboard splint—one leg of the triangle bandaged to the thigh, and another to the trunk —makes an excellent ambulatory apparatus in the treatment of fractures of the shaft of the femur in small children. It maintains reduction, leaves the leg free and does not interfere with keeping the child clean. Cardboard splints can be best molded to an extremity by tearing, instead of cutting them.

SKIN.

Exposure to the x-rays causes atrophy of the sweat glands; radiotherapy is proving the most satisfactory treatment for hyperidrosis.

Pure nitric acid, applied on the narrow, blunt tip of a glass rod is successful in the complete destruction of verruccae, but only if it is forced down into their very roots.

SKIN.

Localized, indurated or softening skin infections ("boils") often disappear completely or open painlessly under an application of emplastrum plumbi in which is incorporated 10 per cent. of salicylic acid, or of 10 per cent. to 20 per cent. salicylated soap plaster. After the boil opens the tiny dressing should be changed every two or three hours.

When shaving the hair in the neighborhood of a boil, draw the razor from the base to the apex so as not to drive microorganisms deeper into the tissues.

WOUNDS.

If an incised wound in the soft parts does not heal as readily as it should, examine the urine for sugar.

In wounds made by coal on the exposed parts of the body, remove all the particles of coal dust; otherwise a disfiguring pigmentation might follow.

A broad clean ulcer on the soft parts often heals per primam if its surface is swabbed with iodin and its edges then brought together with adhesive straps.

The appearance of emphysema in the tissues about an infected wound, accompanied by fever and escape of bubbles of gas from the wound, should be regarded as very ominous, and indicative of gas bacillus infection. Such cases should be treated by extensive incisions.

Blank cartridge wounds must be laid wide open, all dirt and wad carefully removed, and the area swabbed out with tincture of iodin, or with pure carbolic acid followed by alcohol.

TUMORS.

Soft tumors under the skin, disappearing in the recumbent posture, are usually lymphangiomata.

If a swelling is "fluctuating" do not be too sure that it is not a solid growth. Lymphangiomata fluctuate.

A subcutaneous tumor with a history of puncture or the presence of a minute scar in the overlying skin, usually means that one is dealing with an inclusion- or so-called Ranvier cyst.

In hard swellings of doubtful nature

marked tenderness is significant of actinomycosis, when acute inflammation may be excluded.

Do not give a good prognosis in cases of melanosarcoma of the fingers or toes, no matter how small the tumor may be, and no matter how high the amputation is performed. In the majority of cases, these patients succumb to metastases.

In the presence of a pulsating tumor, especially of the bone, examine the kidneys. Secondary hypernephromata always pulsate.

The "egg shell crackle" of certain bone tumors is characteristic of multiple myeloma. Examine the urine for albumose.

In cases of bone tumor there are three organs which should never be overlooked in seeking a primary growth—the thyroid, prostate and mammary glands.

An amputation for malignant ulceration should not be performed until the possibility of its being merely a broken-down gumma has been satisfactorily excluded.

Individuals with bluish sclerotics, and with dark lanugo over the upper part of the back, are usually of tuberculous diathesis; and these signs are not inconsequential in making a diagnosis.

Surgical tuberculosis, no less than pulmonary tuberculosis, calls for the most careful general treatment, post-operative and otherwise.

The temptation should not be yielded to to incise a psoas, hip or other "cold" abscess, except in isolated instances and then only under the most rigid asepsis. The production of a mixed infection means chronic sinus, chronic invalidism and, often, amyloid disease.

ANESTHESIA

In operations upon the head or neck the anesthetist must see to it that no instrument is allowed to lie over the cornea, especially if it is exposed. Ulceration may be caused with ease; it is often healed with difficulty.

During narcosis, when stertorous breathing calls for extension of the jaw, it is well to hold it forward first on one side, then on the other, alternating at short intervals. Long

continued pressure at the angle or angles of the jaw produces much soreness. Often the jaw can be kept forward by catching the lower incisor teeth in front of the upper ones (if they are strong); a single finger on the chin is enough to maintain this position.

Whenever the arrangement of a patient upon the operating table requires an extremity to occupy a constrained position, that position should be shifted from time to time to avoid pressure paralysis. The anesthetist should never draw the arms alongside the head, nor permit the strap of a leg-holder to press, for more than a few minutes at a time, upon the brachial plexus in the neck.

Nitrous oxid narcosis can, in most cases, be continued "smoothly," with no cyanosis and with fair degree of relaxation, even for an hour. A laparotomy may thus be performed, if ether and chloroform are contraindicated. To secure such a narcosis it is best to use an apparatus that permits exhalation into the gas bag, and which has a valve for the admission of air. The bag should not be distended fully. After brief air and gas administrations, air is turned off and the patient breathes N_2O and his own CO_2. At short intervals, and whenever

there is any cyanosis, a single breath of pure air is allowed.

Local anesthetics cannot be injected painlessly into tense, inflamed areas unless the injection is begun at a point in the skin well beyond the seat of inflammation.

INFUSIONS.

For a single intravenous infusion, as to combat the shock of hemorrhage, it is not essential that the solution contain any of the blood salts but the most abundant one—sodium chlorid. For repeated infusions, however, as sometimes used in treating various toxemias, it is better to employ also the other salts, the solution being made of sodium chlorid 0.9, potassium chlorid 0.03, calcium chlorid 0.02, water 100.

Intravenous saline infusions in too large volume are harmful by the production of congestion of the internal viscera. One to one and a half pints are enough for an adult of average weight.

In performing subcutaneous infusion do not allow too much fluid to accumulate at one area, otherwise necrosis may occur. Shift the needle to various parts not by

swinging it from side to side, but by partly withdrawing it and reinserting it to another area.

POST-OPERATIVE.

The pain in the lower part of the back, that is so frequently complained of after operation, can be best relieved by placing a small pillow in the hollow of the spine.

In determining the cause of a post-operative fever never fail to look at the throat.

If, after a period of post-operative catheterization, the patient finds herself unable to pass urine spontaneously, apply hot towels to the vulva.

Gastric lavage is the best post-operative anti-emetic.

Vomiting may frequently be controlled by one-drop doses of tincture of iodin in water at half-hourly intervals.

INSTRUMENTS.

Aluminum instruments should not be boiled in soda solution, like other instruments. They are to be sterilized by boiling in plain water or by passing them through an alcohol or Bunsen flame.

Warming a laryngeal mirror prevents condensation of the breath upon it for only a short time. The mirror will remain bright, however, throughout a prolonged examination if, instead of warming it, its surface is smeared with an invisible film of soap.

The use of an "invalid table," the shelf of which projects over the patient's body, will be found a great convenience during operations as a receptacle for instruments in immediate use. It saves time and temper, and avoids accumulation of instruments on the patient's body.

When scissors become "catchy" their edges can often be surprisingly smoothed by carrying each blade repeatedly from lock to tip between the firmly pressing thumb and forefinger. Each kind and size of scissors has its own capacity, and should be used only for what it is intended. Ophthalmic instruments are not intended for ordinary dissections, tissue scissors should not be used for cutting bandages, nor bandage scissors for plaster-of-Paris.

A scroll-saw, with an assortment of a dozen saws, can be purchased at the hardware store for twenty-five cents; it is ideal

for resection of the small bones of the hand and foot, for amputations of the digits, etc.

Well tempered carpenter's chisels and gouges, and a carpenter's wooden mallet answer the purpose admirably for bone work. A useful bone drill can also be selected from the stock of the hardware dealer.

A gardener's pruning knife and a carpenter's miter saw are the best tools for the removal of plaster dressings.

A cheap potato knife, rough sharpened on a stone, is excellent for cutting through starch bandages.

Crochet needles are most useful for lifting buried stitches out of a sinus.

Knitting needles find another purpose as a means of rupturing the membranes when this is needed in obstetrical work.

Sharp and blunt retractors may be fashioned, in an emergency, by bending the tines of a fork and the handle of a spoon, respectively.

A teaspoon is also useful as an elevator of the eye, when resection of the superior maxilla is performed.

An inverted tea-strainer is useful in the dressing after colostomy, to prevent pressure of the gauze upon the gut.

A spoon-shaped potato cutter may be used, in an emergency, as a wound curette.

The multiple surgical uses of the hairpin are also well-known. Of stouter material, if necessary, a small self-retaining retractor can be quickly made from steel wire; it often obviates the need of an assistant when searching the hand or foot for a foreign body.

Similarly, applicators, probes and depressors may be improvised by twisting stout copper wire.

A wedge of hard wood makes a gag quite useful, often, when administering anesthesia.

A discarded thermometer case (or a hard rubber douche point) is a serviceable handle in which to mount, with candle grease or adhesive plaster, a stick of silver nitrate.

INSTRUMENTS.

Cheap powder blowers, such as are used for insecticides, may be employed as insufflators in surgical work, and pepper boxes are useful for dusting powders.

Steel spring tape-measures are better than the wires generally sold for the purpose, for conducting to an x-ray tube the current from the coil or static machine; easily kept taut, and quickly adjusted, they are safest for the patient and most convenient for the operator; that they are not insulated is inconsequential —the coverings on the regular wires do not insulate the induced current.

Wooden skewers are serviceable nail-cleaners. Rolling pins and kitchen towel racks are very convenient for adhesive plaster, rubber tissue, etc., especially for hospital dressings.

Tar-paper is a smooth, fairly waterproof material to tack on the floor when preparing a room for operation.

SUTURES.

The threading of catgut or kangaroo tendon through a needle-eye not very roomy may be made easy by cutting the suture end obliquely and flattening it between the han-

dles of the scissors. Silk must not be cut obliquely, however, for this makes it apt to unravel while it is being threaded.

Silkworm-gut is easily dyed, and incidentally impregnated with an antiseptic, by immersing it for twenty-four hours in one per cent. solution of methyl violet, before the boiling.

When suturing a wound of the scrotum, if the tissue (dartos) is contracted, apply a warm compress for a moment to cause relaxation.

Catgut strands do not make a good drain for wounds; they tend to swell and occlude.

DRESSINGS.

Grocers' paper bags are well-adapted receptacles for soiled dressings.

When a "wet dressing" fails to properly drain a septic wound try a glycerin dressing —gauze wrung out in pure glycerin and covered with waterproof material.

Subiodid of bismuth dusted on an oozing granulating wound promptly stops the bleeding. It is also an excellent stimulant to the growth of epithelium.

Gauze is preferable to cotton for padding the axilla or breasts in dressings that are not frequently renewed. Cotton easily becomes matted with sour-smelling secretions and thus sets up dermatitis. The skin over the tendo Achilles and about the heel cannot be too carefully padded, when applying Buck's extension apparatus.

Collodion, commonly used to seal a puncture wound, as after aspiration, will not adhere if the spot is wet or bleeding. To obviate this, pinch up the skin, wipe it dry, apply the collodion and continue the compression a minute or so until the collodion has begun to contract.

When rubber tissue is not at hand to make a "cigarette drain," rubber tubing may be used in its place. Split a piece of tubing of appropriate length, and lay the wick of gauze in the trough thus made. Fenestrae may be cut as desired.

The painfulness of withdrawing packings that have dried in a wound may be avoided by soaking them with peroxid of hydrogen.

A urethral endoscope will be found a great help as a means of introducing a rubber drainage tube into a narrow, tortuous sinus.

The change of dressings of burns may be made painless, and the growth of epithelium encouraged, by employing next to the wound sterile strips of gutta-percha in the same manner as for skin-grafts. Subiodid of bismuth lightly dusted on the granulating surface stimulates epithelial growth.

Patients will appreciate the use of black bandages for the scalp—where they are comparatively inconspicuous, and for the hands—where they do not soil.

Mastoid and scalp dressing may be reduced in bulk, and the uncomfortable neck turns of the bandage avoided, by the use of starch bandages, which hold neatly and firmly.

Bandages may be fastened in place more neatly and more securely with strips of adhesive plaster, than with safety pins. When bandaging a finger or toe, turns about the

hand or foot will be unnecessary if the dressing is fastened down with a narrow strip of plaster run over the top from base to base, and another strip circularly about the dressing at the base of the digit. When using black bandages, employ black adhesive plaster.

Stains of anilin dyes may be removed from the fingers with strong hydrochloric acid, stains of iodin with aqua ammonia, and stains by silver nitrate with potassium iodid solution.

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